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Yu et al.

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(54) **ADAPTIVE ANTENNA TUNING SYSTEM  
FOR IMPROVING CELLULAR CALL  
RECEPTION IN MOBILE DEVICES**

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(71) Applicant: **Apple Inc.**, Cupertino, CA (US)

(72) Inventors: **Dongchang Yu**, San Jose, CA (US);  
**Ming Hu**, Sunnyvale, CA (US);  
**Hailong Yang**, Daly City, CA (US);  
**Tarakkumar G. Dhanani**, San Jose,  
CA (US); **Vijay Gadde**, San Jose, CA  
(US); **Xueting Liu**, San Jose, CA (US);  
**Dikshit Garg**, San Jose, CA (US);  
**Neeraj D. Vaghela**, San Jose, CA (US);  
**Mohit Narang**, Cupertino, CA (US);  
**Sharad Garg**, Cupertino, CA (US)

(57) **ABSTRACT**

A wireless communication device (UE) may conduct wireless communications using one or more antennas according to multiple radio access technologies (RAT) associated with corresponding operating frequency bands. The UE may perform adaptive antenna tuning, for example, application-based antenna tuning for increasing the operating efficiency of the UE, which may improve user experience. The UE may periodically identify one or more applications running on the UE, the respective RATs that support the (running) applications, and which of the corresponding frequency bands are used by the (running) applications. The UE may determine the tuner device settings for tuning the one or more antenna (s) based on the (running) applications or the type and/or priority of the (running) applications, which RATs support the running applications, which of the corresponding frequency bands are used by the (running) applications, and operating conditions associated with the frequency bands used by the (running) applications.

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